

### **ABSTRACT OF THE DISCLOSURE**

An on-chip data independent method and apparatus for channel error estimation in a data recovery scheme is based on measuring phase noise statistics. The apparatus (10) receives a data pulse and four quadrature clock signals and has a discriminating device (11) to provide a count signal for each data pulse received depending on which clock signal was the first to clock the particular data pulse. A pair of counters (12 and 13) counts the number of data pulses received at different phase offsets to provide a value representing a statistical ratio of the counts at different clock phase offsets from which an error rate for the received data pulses based on the counts at different clock phase offsets can be determined from a look-up table (16). By re-configuring the circuitry, the system can be adapted to measure clock window asymmetry.